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HARRITY & SNYDER, LLP
11240 WAPLES MILL ROAD
SUITE 300
FAIRFAX, VA 22030

SMITH, PETER J

ART UNIT	PAPER NUMBER
2176	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/638,082	DEAN ET AL.
	Examiner	Art Unit	
	Peter J Smith	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communications: amendment filed on 5/12//2004.

2.   Claims 1-25 are pending in the case. Claims 1, 10, 12, 20, 22, 23, and 25 are

independent claims.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   Claims 10-11, 20-21, and 23-24 are rejected under 35 U.S.C. 101 because the

claimed invention is directed to non-statutory subject matter. Dependent claims 11 and

21 include a "carrier wave" which is non-statutory because it does not fit into any of the

three statutory product classes because it is non-physical. See MPEP §2106:

> For the purposes of a 35 U.S.C. 101 analysis, it is of little relevance whether the claim is directed to a
> machine or a process. The legal principles are the same. AT &T Corp. v. Excel Communications, Inc.,
> 172 F.3d 1352, 1357, 50 USPQ2d 1447, 1451 (Fed. Cir. 1999).
> (a) Statutory Product Claims
> Products may be either machines, manufactures, or compositions of matter.
>
> A *machine* is "a concrete thing, consisting of parts or of certain devices and combinations of devices."
> Burr v. Duryee, 68 U.S. (1 Wall.) 531, 570 (1863).
>
> A *manufacture* is "the production of articles for use from raw or prepared materials by
> giving to these materials new forms, qualities, properties or combinations, whether by hand labor or by
> machinery." Chakrabarty, 447 U.S. at 308, 206 USPQ at 196-97 (quoting American Fruit Growers, Inc.
> v. Brogdex Co., 283 U.S. 1, 11 (1931)).
>
> A *composition of matter* is "a composition of two or more substances [or] . . . a[] composite article,
> whether [it] be the result[] of chemical union, or of mechanical mixture, or whether . . . [it] be [a] gas[],
> fluid[], powder[], or solid[]." Id. at 308, 206 USPQ at 197 (quoting Shell Development Co. v. Watson,
> 149 F. Supp. 279, 280, 113 SPQ 265, 266 (D.D.C. 1957), aff'd per curiam, 252 F.2d 861, 116 USPQ
> 428 (D.C. Cir. 1958)).
>
> If a claim defines a useful machine or manufacture by identifying the physical structure of the machine
> or manufacture in terms of its hardware or hardware and software combination, it defines a statutory
> product. See, e.g., Lowry, 32 F.3d at 1583, 32 USPQ2d at 1034-35; Warmerdam, 33 F.3d at 1361-62,

31 USPQ2d at 1760. Office personnel must treat each claim as a whole. The mere fact that a hardware element is recited in a claim does not necessarily limit the claim to a specific machine or manufacture. Cf. In re Iwahashi, 888 F.2d 1370, 1374-75, 12 USPQ2d 1908, 1911- 12 (Fed. Cir. 1989), cited with approval in Alappat, 33 F.3d at 1544 n.24, 31 USPQ2d at 1558 n.24.

A claim limited to a machine or manufacture, which has a practical application in the technological arts, is statutory. In most cases, a claim to a specific machine or manufacture will have a practical application in the technological arts. See Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557 ("the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means. This is not a disembodied mathematical concept which may be characterized as an abstract idea,' but rather a specific machine to produce a useful, concrete, and tangible result."); and State Street, 149 F.3d at 1373, 47 USPQ2d at 1601 ("the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces a useful, concrete and tangible result' – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades."). Also see AT &T, 172 F.3d at 1358, 50 USPQ2d at 1452 (Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held patentable subject matter because the process used the algorithm to produce a useful, concrete, tangible result without preempting other uses of the mathematical principle.).

The three statutory product classes have traditionally required physical structure or matter. The claimed carrier wave has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine. The claimed carrier wave is not matter, but a form of energy, and therefore is not a composition of matter. A manufacture can be an article produced from raw or prepared materials by manipulating the raw or prepared materials. A manufacture is also defined as the residual class of product. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. Thus, the Examiner concludes that the claimed carrier wave is not one of the three statutory product classes.

Independent claims 10, 20, and 23 are rejected as non-statutory because they are broader than claims 11, 21, and 23 and thus since the dependent claims are non-statutory, they make the computer readable medium of claims 10, 20, and 23 a non-statutory limitation.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claim 25 is rejected under 35 U.S.C. 102(e) as being anticipated by Najork et

al. (hereafter referred to as Najork-B), US 6,263,364 B1 filed 11/2/1999.

Regarding independent claim 25, Najork-B discloses prioritizing a plurality of

links to hyperlinked documents to be crawled and crawling a hyperlinked document using

one of the prioritized plurality of links in col. 2 line 58 – col. 3 line 27.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Najork et al. (hereafter referred to as Najork-A), US 6,321,265 B1 filed 11/2/1999 in

view of Najork et al. (hereafter referred to as Najork-B), US 6,263,364 B1 filed

11/2/1999.

Regarding independent claim 1, Najork-A teaches sending a request for additional links to hyperlinked documents to a link manager in fig. 2-4 and col. 5 line 53 – col. 6 line 6. The Frontier data structure queues organize and manage the links to hyperlinked documents and act as a link manager for the web crawler. The Frontier data structure provides links to the web crawler. Najork-B further teaches how the Frontier data structure provides links in col. 3 line 58 – col. 4 line 17. Najork-A teaches receiving a plurality of links to hyperlinked documents to be crawled in col. 1 lines 31-47 and col. 3 lines 3-52. Najork-A teaches grouping the plurality of links to hyperlinked documents by host in fig. 7 and col. 2 lines 24-36. Najork-A teaches selecting a host to crawl next according to a stall time of the host in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A teaches crawling a hyperlinked document from the selected host in col. 1 lines 31-47 and col. 3 lines 3-52.

Najork-A does not teach that the plurality of links to be crawled are selected by the link manager based on priority. Najork-B does teach that the plurality of links to be crawled are selected by the link manager based on priority in fig. 2, 7-8, 12-16, col. 2 line 58 – col. 3 line 27, and col. 9 line 44 – col. 12 line 19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-B into Najork-A to have created the claimed invention. It would have been obvious and desirable to have implemented a prioritized selection of the links so that either higher quality content or rapidly changing content could be higher priority and crawled over lower quality and less frequently changing links as such motivation is disclosed in Najork-B col. 3 lines 1-27.

Regarding dependent claim 2, Najork-A teaches wherein the stall time of the host is the earliest time in which a hyperlinked document from the host should be crawled in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Regarding dependent claim 3, Najork-A teaches selecting a host with a stall time that is earlier than the current time in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Regarding dependent claim 4, Najork-A does not explicitly teach grouping the hosts according to the number of hyperlinked documents to be crawled at each host. Najork-A assigning hosts to queues in fig. 7, and col. 8 line 63 – col. 9 line 3. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Najork-A to have created the combined invention. It would have been obvious and desirable to have grouped the hosts according to the number of hyperlinked documents to be crawled so that the queues could have been balanced with hosts containing small numbers of documents combined to fill a queue with a workload equal to another queue containing a host with a large number of documents to be crawled.

Regarding dependent claim 5, Najork-A teaches examining hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than the current time in fig. 5-7, col. 1 line 31 – col. 2 line 2, and col. 2 lines 37-62. Najork-A does not teach examining the groups in the specific descending order of the number of hyperlinked documents to be crawled. It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined Najork-A and Najork-B to have created the claimed invention. It would have been obvious and desirable to have examined the hosts in a descending order of hyperlinked documents to

be crawled so that the hosts were examined in a logical order. This would have made the link selection process for the web crawler straightforward and easy to program.

Regarding dependent claim 6, Najork-A teaches sorting the hosts in fig. 6-7 and col. 1 line 60 – col. 2 line 2 and col. 2 lines 37-62. Najork-A does not specifically teach sorting the hosts by stall time. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-A and Najork-B to have sorted the hosts according to stall time. It would have been obvious and desirable to have done this so that the web crawler could have crawled the sites in a time-efficient order.

Regarding dependent claim 7, Najork-A does not teach moving the selected host to a group with one less hyperlinked documents to be crawled. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Najork-A so that the a selected host would have been moved to a group with one less hyperlinked documents to be crawled. It would have been obvious and desirable to have done this so that the groups would have remained balanced for the web crawler.

Regarding dependent claim 8, Najork-A teaches determining a retrieval time for retrieving the hyperlinked document from the selected host in col. 2 lines 43-52.

Regarding dependent claim 9, Najork-A teaches adjusting subsequent stall times for the selected host according to the retrieval times in col. 2 lines 43-52.

Regarding independent claim 10, Najork-A teaches computer code that requests links from a link manager in fig. 2-4 and col. 5 line 53 – col. 6 line 6. The Frontier data structure queues organize and manage the links to hyperlinked documents and act as a link manager for the web crawler. The Frontier data structure provides links to the web crawler. Najork-A teaches receiving a plurality of links to hyperlinked documents to be

crawled in col. 1 lines 31-47 and col. 3 lines 3-52. Najork-A teaches grouping the

plurality of links to hyperlinked documents by host in fig. 7 and col. 2 lines 24-36.

Najork-A teaches selecting a host to crawl next according to a stall time of the host in fig.

6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A

teaches crawling a hyperlinked document from the selected host in col. 1 lines 31-47 and

col. 3 lines 3-52. Najork-A teaches a computer readable medium that stores computer

codes in fig. 1 and col. 1 lines 13-30.

Najork-A does not teach that the plurality of links to be crawled are selected by

the link manager based on priority. Najork-B does teach that the plurality of links to be

crawled are selected by the link manager based on priority in fig. 2, 7-8, 12-16, col. 2 line

58 – col. 3 line 27, and col. 9 line 44 – col. 12 line 19. It would have been obvious to one

of ordinary skill in the art at the time the invention was made to have combined Najork-B

into Najork-A to have created the claimed invention. It would have been obvious and

desirable to have implemented a prioritized selection of the links so that either higher

quality content or rapidly changing content could be higher priority and crawled over

lower quality and less frequently changing links as such motivation is disclosed in

Najork-B col. 3 lines 1-27.

Regarding dependent claim 11, Najork-A teaches a computer readable medium

which is a CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, or

data signal embodied on a carrier wave in fig. 1 and col. 1 lines 13-30.

Regarding independent claim 12, Najork-A teaches sending a request for

additional links to hyperlinked documents to a link manager in fig. 2-4 and col. 5 line 53

– col. 6 line 6. The Frontier data structure queues organize and manage the links to

hyperlinked documents and act as a link manager for the web crawler. The Frontier data structure provides links to the web crawler. Najork-A teaches receiving a plurality of links to hyperlinked documents to be crawled in col. 1 lines 31-47 and col. 3 lines 3-52. Najork-A teaches grouping the plurality of links to hyperlinked documents by host in fig. 7 and col. 2 lines 24-36. Najork-A teaches selecting a host to crawl next according to a stall time of the host in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A teaches crawling a hyperlinked document from the selected host in col. 1 lines 31-47 and col. 3 lines 3-52. Najork-A teaches determining a retrieval time for retrieving the hyperlinked document from the selected host in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A teaches adjusting subsequent stall times for the selected host according to the retrieval time in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Najork-A does not teach that the plurality of links to be crawled are selected by the link manager based on priority. Najork-B does teach that the plurality of links to be crawled are selected by the link manager based on priority in fig. 2, 7-8, 12-16, col. 2 line 58 – col. 3 line 27, and col. 9 line 44 – col. 12 line 19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-B into Najork-A to have created the claimed invention. It would have been obvious and desirable to have implemented a prioritized selection of the links so that either higher quality content or rapidly changing content could be higher priority and crawled over lower quality and less frequently changing links as such motivation is disclosed in Najork-B col. 3 lines 1-27.

Regarding dependent claim 13, Najork-A teaches wherein the stall time of the host is the earliest time in which a hyperlinked document from the host should be crawled in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Regarding dependent claim 14, Najork-A teaches selecting a host with a stall time that is earlier than the current time in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Regarding dependent claim 15, Najork-A does not explicitly teach grouping the hosts according to the number of hyperlinked documents to be crawled at each host. Najork-A does teach grouping the hosts in fig. 7, and col. 2 lines 24-36. Najork-B teaches prioritizing document downloads in col. 2 line 58 – col. 3 line 27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-B into Najork-A to have created the combined invention. It would have been obvious and desirable to have grouped the hosts according to the number of hyperlinked documents to be crawled so that the largest groups could have been processed first and the system always attempted to have kept the number of documents to be crawled at each host the same so that the crawling would have been distributed evenly among the target hosts.

Regarding dependent claim 16, Najork-A teaches examining the groups in descending order of the number of hyperlinked documents to be crawled at each host until a host is found with a stall time that is earlier than the current time in fig. 5-7, col. 1 line 31 – col. 2 line 2, and col. 2 lines 37-62.

Regarding dependent claim 17, Najork-A teaches sorting the hosts in fig. 6-7 and col. 1 line 60 – col. 2 line 2 and col. 2 lines 37-62. Najork-A does not specifically

teach sorting the hosts by stall time. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Najork-A to have sorted the hosts according to stall time. It would have been obvious and desirable to have done this so that the web crawler could have crawled the sites in a time-efficient order.

Regarding dependent claim 18, Najork-A does not teach moving the selected host to a group with one less hyperlinked documents to be crawled. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Najork-A so that the a selected host would have been moved to a group with one less hyperlinked documents to be crawled. It would have been obvious and desirable to have done this so that the groups would have remained balanced for the web crawler.

Regarding dependent claim 19, Najork-A teaches determining a retrieval time for retrieving the hyperlinked document from a selected host in col. 3 lines 23-29.

Regarding independent claim 20, Najork-A teaches sending a request for additional links to hyperlinked documents to a link manager in fig. 2-4 and col. 5 line 53 – col. 6 line 6. The Frontier data structure queues organize and manage the links to hyperlinked documents and act as a link manager for the web crawler. The Frontier data structure provides links to the web crawler. Najork-B further teaches how the Frontier data structure provides links in col. 3 line 58 – col. 4 line 17. Najork-A teaches receiving a plurality of links to hyperlinked documents to be crawled in col. 1 lines 31-47 and col. 3 lines 3-52. Najork-A teaches grouping the plurality of links to hyperlinked documents by host in fig. 7 and col. 2 lines 24-36.

Najork-A teaches selecting a host to crawl next according to a stall time of the host in fig. 6, col. 1 line 60 – col. 2 line 2, col. 2 lines 37-62, and col. 3 lines 23-39.

Najork-A teaches crawling a hyperlinked document from the selected host in col. 1 lines
31-47 and col. 3 lines 3-52. Najork-A teaches determining a retrieval time for retrieving
the hyperlinked document from the selected host in fig. 6, col. 1 line 60 – col. 2 line 2,
col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A teaches adjusting subsequent stall
times for the selected host according to the retrieval time in fig. 6, col. 1 line 60 – col. 2
line 2, col. 2 lines 37-62, and col. 3 lines 23-39. Najork-A teaches a computer readable
medium that stores computer codes in fig. 1 and col. 1 lines 13-30.

Najork-A does not teach that the plurality of links to be crawled are selected by
the link manager based on priority. Najork-B does teach that the plurality of links to be
crawled are selected by the link manager based on priority in fig. 2, 7-8, 12-16, col. 2 line
58 – col. 3 line 27, and col. 9 line 44 – col. 12 line 19. It would have been obvious to one
of ordinary skill in the art at the time the invention was made to have combined Najork-B
into Najork-A to have created the claimed invention. It would have been obvious and
desirable to have implemented a prioritized selection of the links so that either higher
quality content or rapidly changing content could be higher priority and crawled over
lower quality and less frequently changing links as such motivation is disclosed in
Najork-B col. 3 lines 1-27.

Regarding dependent claim 21, Najork-A teaches a computer readable medium
which is a CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, or
data signal embodied on a carrier wave in fig. 1 and col. 1 lines 13-30.

Regarding independent claim 22, Najork-A teaches storing a plurality of links
to hyperlinked documents to be crawled in col. 1 lines 31-47. Najork-A teaches receiving
additional links to hyperlinked documents in fig. 1 and col. 3 lines 3-52. Najork-A

teaches selecting a host to crawl next according to a stall time of the host in fig. 6, col. 1 line 60 – col. 2 line 2 and col. 2 lines 37-62. Najork-A teaches crawling a hyperlinked document from the selected host in col. 1 lines 31-47.

Najork-A teaches determining that more links to hyperlinked documents are desired and sending requests to multiple link managers for more links to hyperlinked documents in fig. 2-4 and col. 5 line 53 – col. 6 line 6. The Frontier data structure queues organize and manage the links to hyperlinked documents and act as link managers for the web crawler. Each link queue manages links from a specific host to provide to the web crawler and thus is similar to each of the claimed link managers. Najork-B further teaches how the Frontier data structure provides links in col. 3 line 58 – col. 4 line 17.

Najork does not explicitly teach sending requests to multiple link managers for more links to hyperlinked documents. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-B into Najork-A and modified the Frontier queuing and indexing system of the combination to have operated the queues as a individual link managers so that links could have still be provided to the web crawler in the event one of the queues experienced an interrupted connection with the web crawler.

Regarding independent claim 23, Najork-A teaches storing a plurality of links to hyperlinked documents to be crawled in col. 1 lines 31-47. Najork-A teaches receiving additional links to hyperlinked documents in fig. 1 and col. 3 lines 3-52. Najork-A teaches selecting a host to crawl next according to a stall time of the host in fig. 6, col. 1 line 60 – col. 2 line 2 and col. 2 lines 37-62. Najork-A teaches crawling a hyperlinked

document from the selected host in col. 1 lines 31-47. Najork-A teaches a computer readable medium that stores computer codes in fig. 1 and col. 1 lines 13-30.

Najork-A teaches determining that more links to hyperlinked documents are desired and sending requests to multiple link managers for more links to hyperlinked documents in fig. 2-4 and col. 5 line 53 – col. 6 line 6. The Frontier data structure queues organize and manage the links to hyperlinked documents and act as link managers for the web crawler. Each link queue manages links from a specific host to provide to the web crawler and thus is similar to each of the claimed link managers. Najork-B further teaches how the Frontier data structure provides links in col. 3 line 58 – col. 4 line 17.

Najork does not explicitly teach sending requests to multiple link managers for more links to hyperlinked documents. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Najork-B into Najork-A and modified the Frontier queuing and indexing system of the combination to have operated the queues as a individual link managers so that links could have still be provided to the web crawler in the event one of the queues experienced an interrupted connection with the web crawler.

Regarding dependent claim 24, Najork-A teaches a computer readable medium which is a CD-ROM, floppy disk, tape, flash memory, system memory, hard drive, or data signal embodied on a carrier wave in fig. 1 and col. 1 lines 13-30.

Response to Arguments

9.   Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection. The Examiner has introduced the prior

art reference of Najork et al., US 6,263,364 B1 filed 11/2/1999 to teach prioritizing the

hyperlinked document downloads by the web crawler. Furthermore, Najork et al., US

6,263,364 B1 provides further details regarding the Frontier data structure which

organizes and provides links to the web crawler. In reviewing the prior art the Examiner

realizes the details of the Frontier data structure are not as explicit and straightforward in

the disclosure of Najork et al., US 6,321,265 B1. Although the two references applied by

the Examiner are related to the same web crawling system, they each contain unique

disclosure elements and the Examiner hopes the combination of the two references will

be more clear than the single reference relied on by the Examiner in the first Office

Action. US 6,321,265 B1 focuses on inserting a stall time between downloads to a host

so that no single host if overloaded with document download requests from the web

crawler. US 6,264,364 B1 focuses on prioritizing the document downloads so that the

web crawler downloads the most important documents first. The disclosure identifies a

variety of different prioritization schemes and motivations. The Examiner believes the

combination of these two references by one of ordinary skill in the art at the time of the

invention teaches Applicant's invention as presently claimed.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Peter J Smith whose telephone number is 703-305-5931.

The examiner can normally be reached on Mondays-Fridays 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph H Feild can be reached on 703-305-9792. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

JOSEPH H. FEILD
PRIMARY EXAMINER

PJS
August 17, 2004